

This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) An opto-electronic package facilitating the passive alignment of VCSELs to waveguides; said package comprising:

a substrate bearing a first surface;

a first cladding layer positioned on said first surface of said substrate;

a contact pad positioned on at least a position of the surface of said first cladding layer;

a second cladding layer located on a further surface position of said first cladding layer;

a waveguide channel being positioned in said second cladding layer, said first and second cladding layers each being constituted of an organic material;

optical means being in optical communication with said waveguide channel in said second cladding layer and in electrical connection with said contact pad on said first cladding layer, at least one transmitter/receiver chip being coupled to said surface of said second cladding layer; and

at least one transmitter/receiver chip being coupled to said surface of said second cladding layer through the interposition of C4-joints.

Claim 2 (Cancelled).

Claims 3 and 4 (Cancelled).

5. (Previously Presented) An opto-electronic package as claimed in claim 1, wherein said substrate comprises a low expansion material approaching the coefficient of thermal expansion of the at least one chip so as to reduce and minimize strains encountered in the C-4 joints.
6. (Previously Presented) An opto-electronic package as claimed in claim 5, wherein said substrate material is selected from the group of materials consisting of epoxy glass composites, utilizing thick yarns and low expansion s-glass with a CTE of as low as 10 ppm/°C.
7. (Previously Presented) An opto-electronic package as claimed in claim 5, wherein an index-matched adhesive couples said second cladding layer directly to said at least one transmitter/receiver chip, and extends between said optical means and waveguide channel.
8. (Previously Presented) An opto-electronic package as claimed in claim 1, wherein said second cladding layer has an integrated chip with optical inputs and outputs mounted on the surface of said cladding layer.
9. (Previously Presented) An opto-electronic package as claimed in claim 1, wherein said package comprises a constituent of a printed circuit board providing for the precise alignment of VCSELs to waveguides.
10. (Previously Presented) An opto-electronic package as claimed in claim 1, wherein said package comprises a constituent of an opto-electronic card providing for the passive alignment of VCSELs to waveguides.

11. (Currently Amended) A method of producing an opto-electronic package facilitating the passive alignment of VCSELs to waveguides; said method comprising:

providing a substrate having a first surface;

positioning a first cladding layer on said first surface of said substrate;

arranging a contact pad on at least a portion of the surface of said first cladding layer;

locating a second cladding layer on a further surface portion of said first cladding layer;

positioning a waveguide channel in said second cladding layer, said first and second cladding layers each being constituted of an organic material;

providing optical means in optical communication with said waveguide channel in said second cladding layer and in electrical connection with said contact pad on said first cladding layer, at least one transmitter/receiver chip being coupled to said surface of said second cladding layer; and

at least one transmitter/receiver chip is coupled to said surface of said second cladding layer through the interposition of C4-joints.

Claim 12 (Cancelled).

Claim 13 and 14 (Cancelled).

15. (Previously Presented) A method as claimed in claim 11, wherein said ~~core~~ substrate comprises a low expansion material approaching the coefficient of thermal expansion of the at least one chip so as to reduce and minimize strains encountered in the C4 joints.

16. (Previously Presented) A method as claimed in claim 15, wherein said core material is selected from the group of materials consisting of epoxy glass composites, utilizing thick yarns and low expansion S-glass with a CTE of as low as 10 ppm/°C.

17. (Previously Presented) A method as claimed in claim 15, wherein an index-matched adhesive couples said second cladding layer directly to said at least one transmitter/receiver chip, and extends between said optical means and waveguide channel.

18. (Previously Presented) A method as claimed in claim 11, wherein an integrated chip with optical inputs and outputs is mounted on the surface of said second cladding layer.

19. (Previously Presented) A method as claimed in claim 11, wherein said package comprises a constituent of a printed circuit board providing for the precise alignment of VCSELs to waveguides.

20. (Previously Presented) A method as claimed in claim 11, wherein said package comprises a constituent of an opto-electronic card providing for the passive alignment of VCSELs to waveguides.

Claims 21-23 (Cancelled).